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Facts about COTTON

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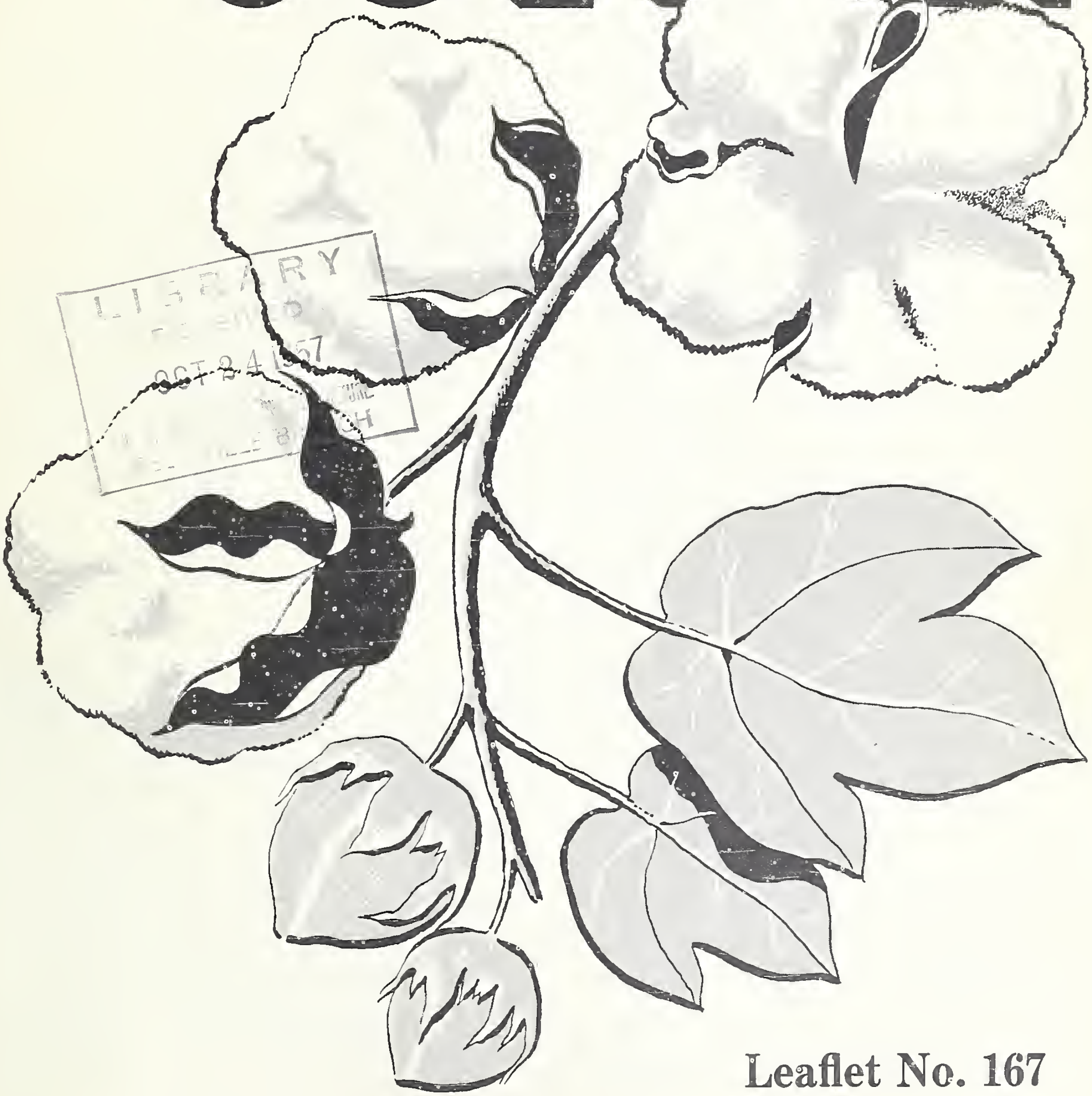
FIELD CROPS



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Leaflet No. 167

U. S. Department of Agriculture

Facts about COTTON

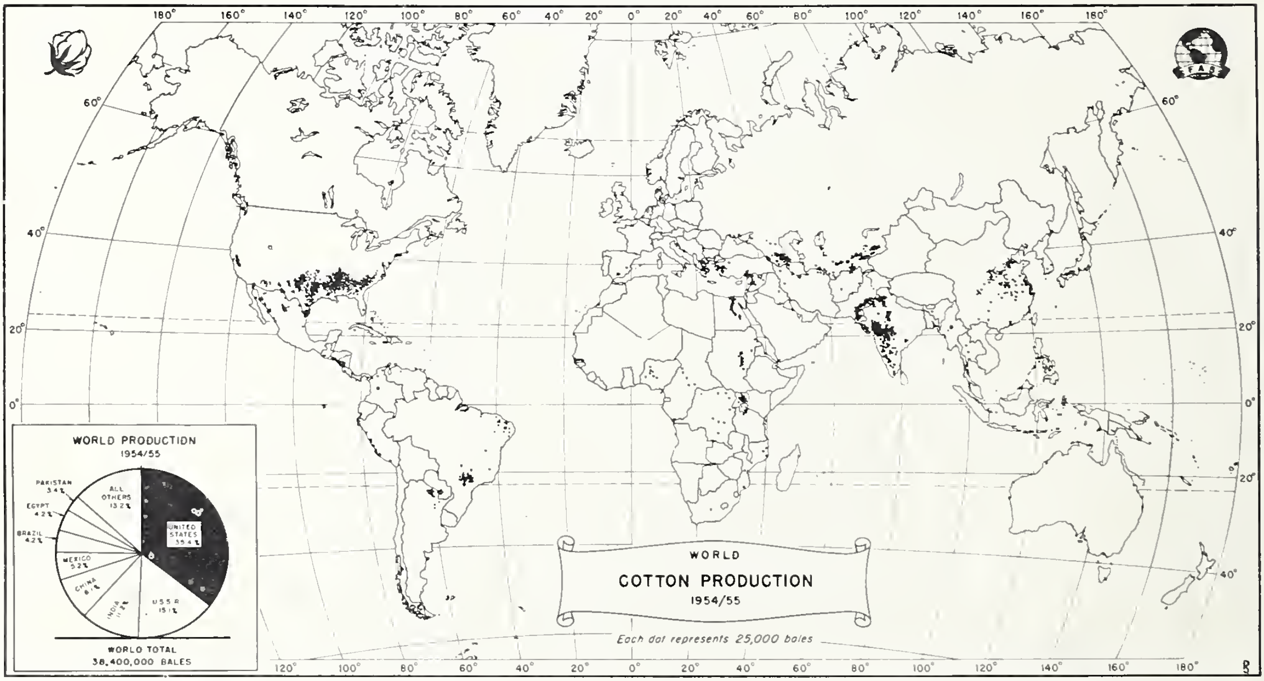
Prepared in the Cotton Division, Agricultural Marketing Service

COTTON PRODUCTION

Cotton—the great crop of the South—is grown on about 900,000 farms in the southern part of the United States. The average size of the crop is about 15 million bales of cotton lint, each weighing about 500 pounds, and more than 6 million tons of cottonseed.

Large quantities of cotton are grown in other countries, too—chiefly India, Pakistan, China, Egypt, Mexico, Brazil, Turkey, Argentina, and the Union of Soviet Socialist Republics. These cottons differ in quality, to some extent, from those grown in the United States and there is also considerable variation in the varieties and qualities of cotton produced here. Usually about two-thirds of the crop grown in the United States is used in the mills in this country. The remainder is exported chiefly to Japan, Great Britain, and the continent of Europe.

The planting of cotton begins in February in the southernmost parts of the Cotton Belt, and moves northward. At the northern edge of the belt and at the higher elevations, planting usually is

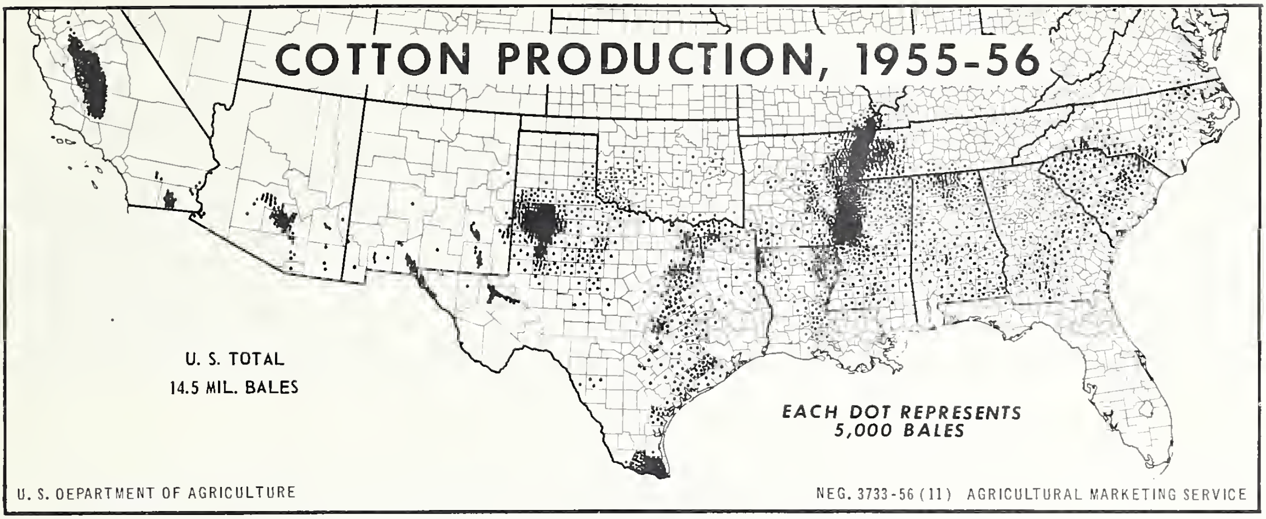


WORLD COTTON PRODUCTION 1954/55

Each dot represents 25,000 bales

U.S. DEPARTMENT OF AGRICULTURE

NEG. 749 FOREIGN AGRICULTURAL SERVICE


COTTON PRODUCTION, 1955-56
U. S. TOTAL
14.5 MIL. BALES
EACH DOT REPRESENTS
5,000 BALES
U. S. DEPARTMENT OF AGRICULTURE
NEG. 3733-56 (11) AGRICULTURAL MARKETING SERVICE

completed in May. As the pictures suggest, the methods of cultivating, harvesting and handling vary throughout the Cotton Belt, from hand methods in some sections to very modern mechanical methods in others. The crop requires considerable handwork, but rapid strides have been made in mechanization. A great deal of progress has been made in cotton production through improved varieties, better fertilizers, and insecticides. The national average yield per acre rose from 156 pounds in 1909 to 416 pounds in 1955, and the average staple length increased from slightly over seven-eighths inch in 1928 to $1\frac{1}{32}$ inches in 1955. Usually cottonpickers of all ages are in great demand for picking from August through November. A field of open cotton bolls with pickers along the rows is a characteristic southern scene in the fall. In recent years, however, mechanical harvesting has been used extensively in some areas. In 1955 about one-fourth of the total United States crop was harvested mechanically.

N-6804

COTTON PLANTING

N-6806

CULTIVATING COTTON

DUSTING COTTON

TEX–47062

S–14962

HAND PICKING

S–14965

MACHINE PICKING

COTTON MARKETING

When cotton is harvested, it is hauled by wagon, truck, or trailer to the gins where the fibers are separated from the seed. These separated fibers are called lint. The lint is packed into bales at the gin, and the seed is either run into the gin's seedhouse or loaded into trucks or freight cars. In 1955 about 7,000 cotton gins in this country were operated through a season of 3 to 6 months. Modern gins are equipped with improved machinery for drying and cleaning the seed cotton and lint in order to preserve the quality of the farmer's products.

At the gin the trade channels of cotton and cottonseed separate. The lint starts on its way to the spinner, who makes it into yarn. If the seed is not taken back to the farms, it starts on its way to the cottonseed oil mills to be converted into such products as cottonseed oil, meal, cake, hulls, and linters.

When the lint cotton comes from the gin it is packed into bales that weigh about 500 pounds gross each. The dimensions of these bales are 56 by 28 by about 45 inches, and the density is about 12 pounds per cubic foot. This type of bale is known as the uncompressed, or flat, bale. It is weighed, marked, and tagged at the gin.

BN-3539

WAITING AT THE GIN

BN-3540

SAMPLING COTTON BY HAND

CLASSIFICATION

BN-3542

DN-1012

SHIPPING COTTON

BN-3541

BALE STORAGE

The bale may then be sold immediately to the ginner or to some other local buyer, or it may be left in the gin yard by the farmer for later sale. Sometimes the cotton is hauled back to the farm, or to a public warehouse, for storage until the farmer is ready to sell, or it may be placed under the Government loan. In the Southeastern States some growers sell direct to spinners. Some farmers sell through their own cooperative associations. As a marketing aid, the Department of Agriculture conducts a classing and market news service which is available without cost to groups of cotton producers organized for cotton improvement. More than four-fifths of the 1955 crop was classed under this service, which resulted in considerable savings in marketing costs.

Several types of buyers are engaged in buying cotton from farmers. Some buyers are agents for large cotton dealers who supply cotton to domestic mills and to exporters. If the local buyer acts for himself, he usually sells to the large firms. The services of a large group of cotton buyers, cotton merchants, exporters, and brokers are involved in bringing raw cotton from producers to spinners in this country and abroad.

Usually each dealer, through whose hands a bale of cotton passes, samples and grades it, as spinners pay for cotton according to its grade and the length of the fiber. The Government, the cotton-growing States, and leading plant breeders are constantly working toward improvement in the quality of American cotton and improvements are being made in methods of evaluating the quality of cotton.

When cotton is to be shipped from the local market, it is loaded on a freight car or a truck and goes to a mill. Usually the cotton is first sent to a compress point. There the bales are compressed to reduce their size so that they will occupy the least possible space in a freight car or in the hold of a ship. About 300 compress plants are distributed throughout the Cotton Belt.

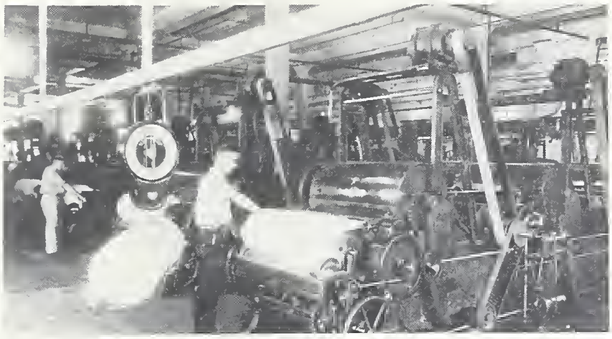
After the bales are compressed they continue their journey by rail, truck, or water direct to mills or to large inland or port markets for storage in warehouses until needed by mills.

Cotton futures markets are an important part of the cotton-merchandising system. These markets provide a means by which cotton merchants and spinners can protect themselves against price changes while cotton is being transported or is in storage. There are three cotton futures markets in the country, located in New York, New Orleans, and Chicago.

COTTON MANUFACTURING

Most of the approximately 1,000 domestic cotton mills that manufacture raw cotton into yarn and cloth are located in the cotton-growing States. Massachusetts leads the non-cotton-growing States in manufacturing cotton. The principal products of this industry are woven cloth, cotton yarn and thread, and waste that is sold to other industries for batting, wadding, and mattress felts.

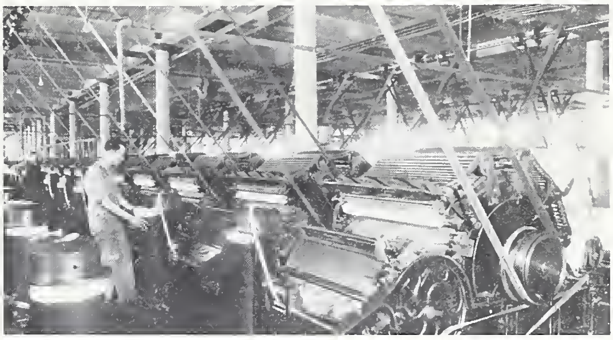
Uses for cotton yarn and cloth are many, but most of the principal uses are familiar to us all. Outstanding are articles of clothing such as work clothes, house dresses, and shirts. Household articles, such as sheets, pillowcases, towels, and tablecloths, require large



DN–1005

COTTONPICKER

This machine cleans cotton and delivers a broad feltlike sheet or lap



DN–1004

COTTON CARDING

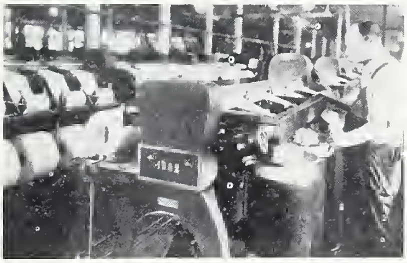
First process of converting cotton into a ropelike sliver

quantities of cotton. Industrial uses, such as cotton bags, and belts and belting, require a good deal of cotton. The total per capita consumption of cotton in the United States averages from 25 to 30 pounds per year.

The transition from hand spindles and looms to power machinery was one of the principal factors in the industrial revolution in the latter part of the 18th century. Since then substantial improvements have been made in manufacturing processes from the standpoint of the quantity of goods produced per man and per machine and of the quality of finished products. Most of these changes have been technical in nature.

Hargreaves' spinning jenny (1764), Arkwright's spinning frame (1769), Crompton's spinning mule (1779), Cartwright's power loom (1789), the harnessing of Watt's engine to spinning and weaving machinery (1785), invention of the cotton gin (1793), ring spinning (1831), automatic loom (1894), and long-draft spinning (1913) are among basic inventions that have revolutionized the manufacture of raw cotton, and along with modern improvements have lowered the prices of finished goods, and increased the use of cotton and cotton cloth enormously.

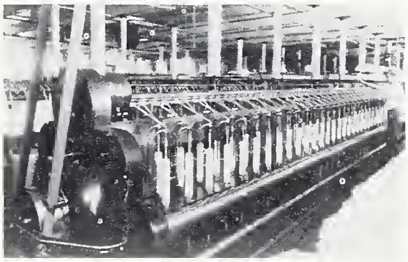
In 1955 there were about 22 million spindles and almost half a million looms manufacturing yarn and cloth in the United States. The story of the principal manufacturing processes in an up-to-date cotton mill is here told by the pictures.



DN–1006

DRAWING FRAME

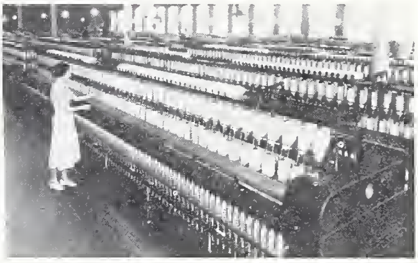
Combining 16 strands of sliver into one



DN–1008

ROVING FRAME

This machine draws the fibers and twists them together

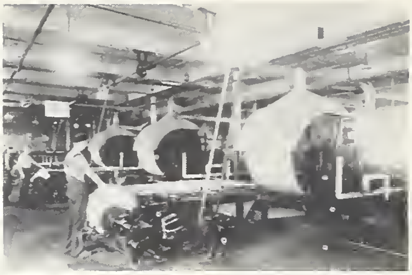


DN–1009

SPINNING FRAME

DN–1007

BARBER-COLEMAN SPOOLER



DN–1011

SLASHER
Warp beams being prepared for loom.

DN–1010

WEAVE ROOM—NARROW LOOMS

COTTONSEED

Cottonseed has become an important crop in itself. The average crop of cottonseed in the United States is more than 6 million tons, of which only about 500,000 tons are used each year for planting. Of the rest, most is sold to the more than 300 cottonseed-processing mills, generally called oil mills, for the preparation of cottonseed oil, cottonseed cake and meal, hulls, and cotton linters.

When marketing cottonseed, the farmer usually sells the seed immediately to the ginner. He may, however, take it home to plant or may sell it direct to a local oil mill. The ginner accumulates seed until he has a large lot, which he then sells to the oil mill that makes him the best offer. At the mills, cottonseed is accumulated in large storage houses from which it is conveyed mechanically, as needed, through the cleaning, delinting, hulling, separating, rolling, cooking, and pressing apparatus.

Cottonseed, as it leaves the gins, usually still has some lint—enough to interfere seriously with the later processes—so the seed is delinted immediately after it is cleaned. These fibers, when removed and baled like cotton (but in 600-pound bales) are called cotton linters and are used for felts and waddings for upholstery for furniture and automobiles, mattresses, and so forth. Linters are also used as a source of cellulose in the manufacture of rayon, varnishes, cellophane, films, and plastics, and in the manufacture of explosives.

The crude cottonseed oil is refined at local plants or at large refineries. Refined cottonseed oil is used chiefly in margarine manufacture but may be sold as salad and cooking oils, or it may be hydrogenated and sold as vegetable shortening under various trade names.

Cotton seed cake is valuable chiefly in the feeding of livestock. It is generally exported in the form of cake or slabs. For feeding cattle, sheep, and hogs, the cakes are cracked into various sizes or are ground into meal. Cottonseed meal is also used as a plant fertilizer. Some cottonseed cake, made entirely from perfectly sound cottonseed, is ground, bolted. and sold as a flour for making bread and cakes for use in hospitals by persons who may not eat starches or sugar.

Cottonseed hulls are used as a roughage feed, and as a source of chemical compounds such as furfural. Other promising ways to use the constituents of hulls are being studied by scientists.

Thus, all the contents of the cotton boll are put to use—the lint, the seed, and the seed hull.

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